Desktop Application to Manage Customer Interaction, and Cash Flow

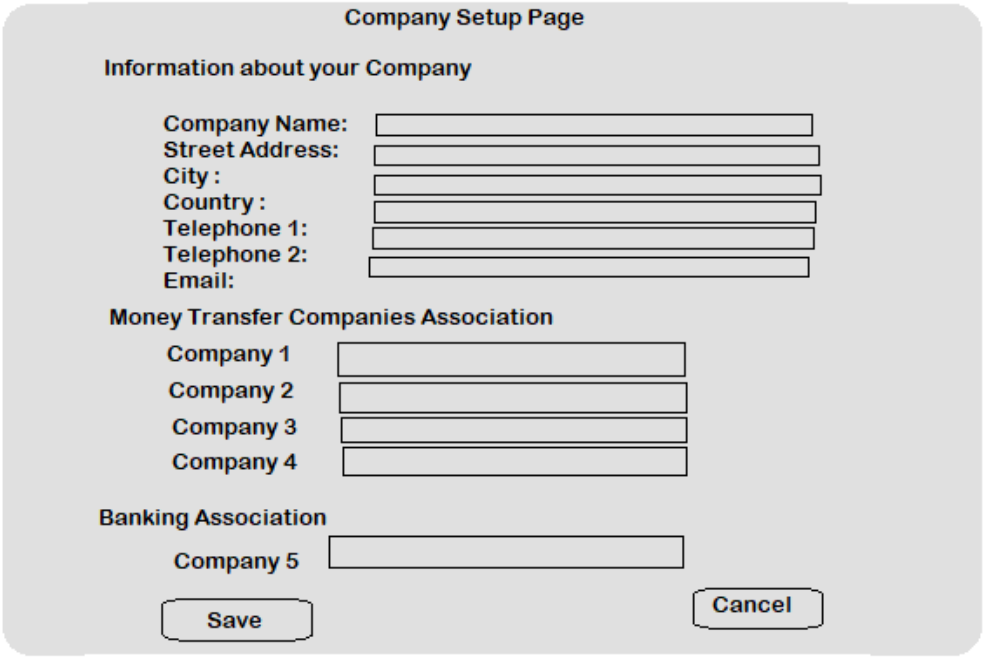
We are a very small company located in northern Haiti, and we are working as a subagent for four major money transfer companies to provide financial services to the community. As part of our activities, we are looking for a developer to build a multiuser LAN application that provides the following features:

a. App is to be used as a Cash Register with login screen, and the option to add cash as needed
b. Search or create customer to receive or send money
c. Store customer's photos, and ID (jpeg and PDF)
d. Keep sender and receiver information in separate tables
e. Record transaction with currency type, and amount to be received or sent
f. Maintain customers' profile with history or log of interactions, and transactions
g. Provide integrated options to send email, SMS, and WhatsApp to customers

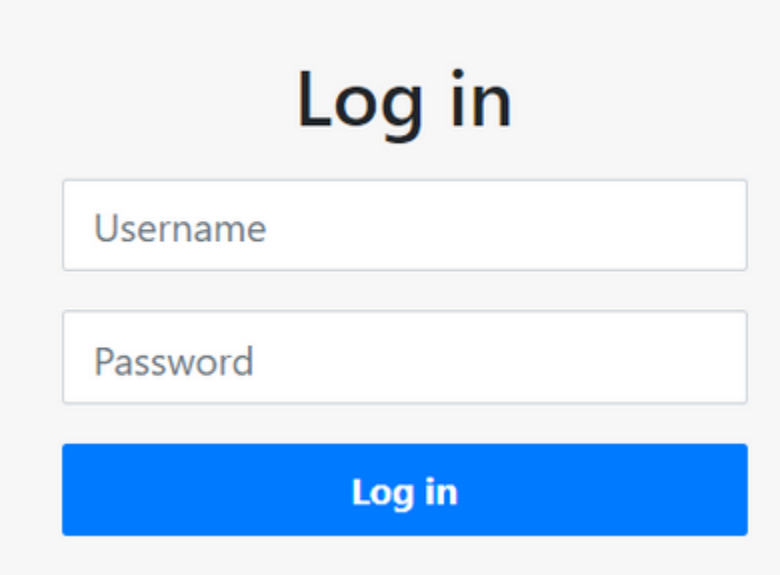
A prototype of such application is explained in details in the pages that follows.

1. Program Installation & Setup

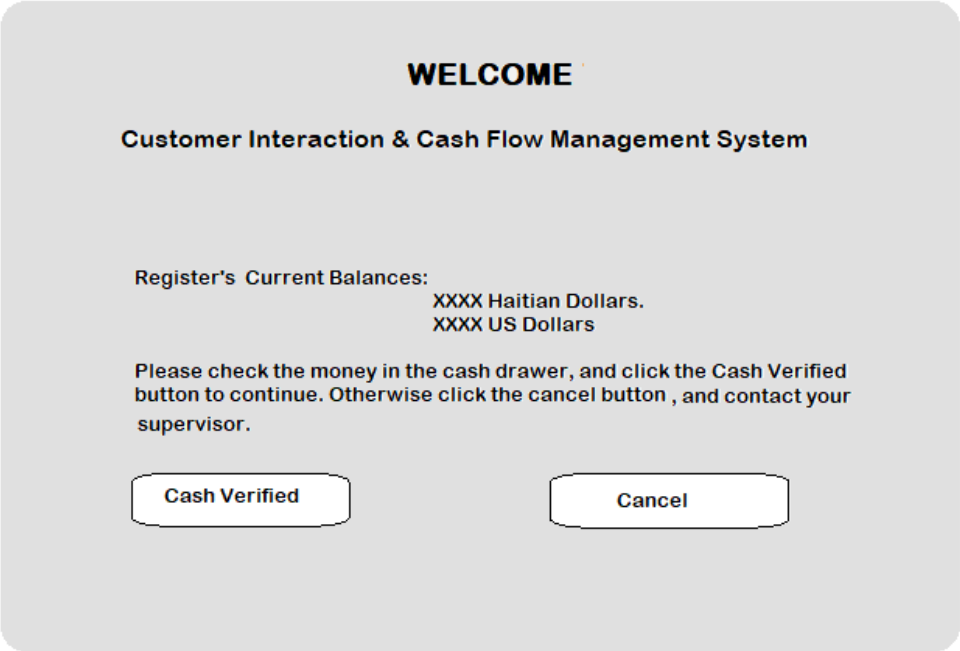
As part of the installation of the software, a company setup is displayed as follows:



2. **Login Screen**. A typical login screen for the app, could look like this one.



3. **Welcome Screen:**

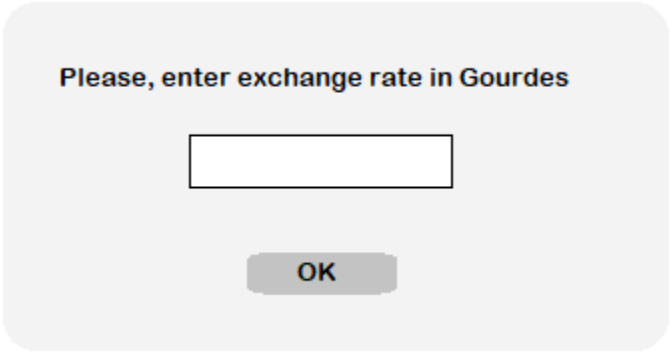


Cash Verified: proceeds to program main screen (dashboard)

Cancel: aborts the login process, and returns to blank login screen

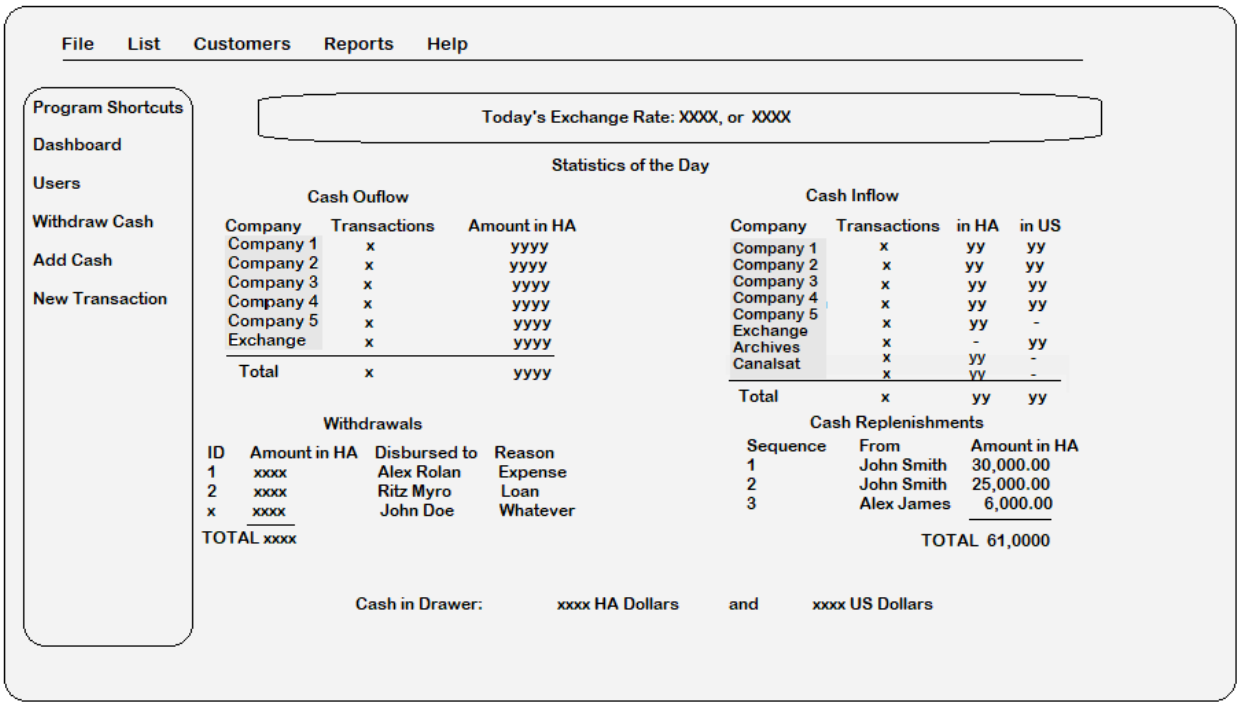
4. Daily Exchange Rate

The exchange rate is set daily by government officials (Central Bank). After main screen is loaded, program checks if daily exchange rate was manually entered for the day. If not, program pops up dialog box for user to input the exchange rate. This is done only ONCE during any 24-hour period.



The OK button is to be grayed out until a valid exchange rate has been entered (number with 4 decimal points). Once an exchange rate has been entered for the day, any regular user will need his or her supervisor's assistance in updating or modifying the exchange rate.

5. Program main screen



a) Menu Bar:

- File:
    - Update exchange rate (Calls the exchange rate dialog box - supervisor only)
    - Add Cash (Calls the Add Funds dialog form - Supervisor only)
    - Withdraw Cash (Calls the withdrawal form – everyone)
    - Backup Database (Calls Backup Database form - Supervisor only)
    - Exit (Quit the program - everyone)

- List:
    - Transactions (listing of transactions per period range, and/or company - everyone)
    - Withdrawals (listing of withdrawals per period range - everyone)
    - Receivers (per selected criteria - everyone)
    - Senders (per selected criteria – everyone)

- Customers:
    - New Customer (Calls Create New Customer form, – Everyone)
    - Search (calls Search Customer form, and displays results – everyone. Results should display all information about a customer, and provide options to record a transaction for the customer, contact the customer)
    - Edit (Search Existing Customer, and allows updating of authorized fields, like Phone number, Address – Everyone)
    - Contact (Ability to send email, SMS, or WhatsApp to a customer – everyone)
    - Blacklist (Add customer to blacklist, supervisor only)
    - Profile (Displays selected customer with transaction logs or history, receivers or senders list)

- Reports:
    - Daily Report
    - Accounting Report
    - Verification Report

- Help
    - About (Software Designed & Developed by XYZ)
    - Whatever

b) Program Shortcuts

- Dashboard (Home screen, displays the statistics on the right - everyone)
- Users (displays list of current users and their role. Provides options to add & delete users – Supervisor only)
- Withdraw Cash (calls the withdrawal form – everyone)
- Add Cash (Calls the Add Funds dialog form, Supervisor only)
- New Transaction (Calls the transaction form – everyone)

Note: Users should be of three access control levels: supervisor/admin, cashier, and operator. Access control for the users is as follows:

- Supervisor/admin: full control
- Cashier: Can create, search, view profiles, contact, and record transactions for customers. Can edit or update customers' addresses and telephone numbers. Can run reports.
- Operator: can create, search, and contact customers, and view their profiles.

c) The Dashboard and its Data

Today's exchange rate

The first number (with 4 decimal points) is a user input number right after login screen and cash verification when the program starts. Regular user can input that number only once in any 24-hour period. All adjustment or update to the daily exchange rate (after it has been entered by a user) requires a supervisor's assistance. The second number, after the word "or" is the user input number divided by 5, displayed in 4 decimal point.

Example: *Today's Exchange Rate: 75.7153 or 15.1431 (75.7153/5)*

6. Dashboard Statistics

6.1. Cash outflow: the cash outflow section displays the companies, the number of transactions per company, and the amount of money being paid out to customers on behalf of each company. Basically, we are dealing with all receive and exchange transactions. A cash outflow will cause the Cash Drawer's balance to decrease. Cash is paid out in HA Dollars only.

Example:

Company	Transactions	Amount in HA
Company 1	5	6,000.00
Company 2	12	7,800.00
Company 3	18	19,783.00
Company 4	7	12,345.00
Company 5	2	535.00
Exchange	1	320.00
TOTAL	45	46,783.00

6.2. Cash Inflow: that's the exact opposite of cash outflow. These are sent transactions, which will cause the balance of the Cash Drawer to increase. Cash received from customers can either be in HA Dollars, or US Dollars.

Example:

Company	Transactions	in HA	in US
Company 1	0	0	0
Company 2	2	1,800.00	150
Company 3	1	0	30
Company 4	0	0	0
Company 5	2	600	-
Exchange	1	-	50
TOTAL	6	2,400.00	230.00

6.3. Withdrawals

The withdraw section displays the details of all money (in HA only) taken out of the Cash Drawer. These are called withdraw transactions, and will decrease the balance of the Cash Drawer. Withdrawals are allowed to pay for the company expenses, or to provide interest free loan to employees.

6.4. Cash Replenishments

A cash replenishment is when money (in HA only) is added to the Cash Drawer by a Supervisor. Therefore, this section displays the sequence of all cash replenishments and their total. A cash replenishment will increase the balance of the Cash Drawer.

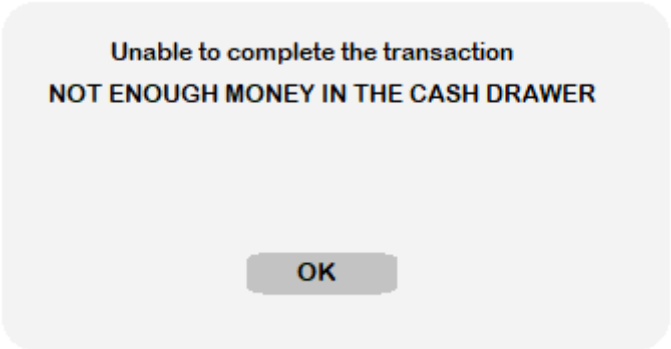
6.5. Cash in Drawer:

Displays the current balance of the Cash Drawer both in HA Dollars, and US Dollars.

When the balance in the Cash Drawer is less than 2000 HA, the program should alert the user by displaying in red (and blinking) the following message:

The register's balance is running low. Please contact your supervisor to add funds to Cash Drawer.

User can continue recording new transactions normally (received or withdraw) as long as the amount of the transaction is less or equal to the balance of the Cash Drawer. That being said, the program should NOT allow a user to record a transaction (received or withdraw) if the balance of the Cash Drawer is less than the amount of the transaction. If a user attempts to record a transaction (received or withdraw) while there is not enough money in the Cash Drawer, the program should alert the cashier by displaying the following error:



7. Customers

When creating a new customer:

Fist, the program should search the database for the ID number that is being provided. If ID is already in the database, new customer cannot be created with the same ID. The program then provides the following options to the user: enter a different ID number, record new transaction for the existing ID, cancel new customer creation. If ID number is not found in the database, user can proceed with creating the customer.

Important: A customer can have on his/her profile up to three different types of government issued IDs (CIN, Driver's License, Passport). The program should be able to link one single customer to three potential ID types (maybe by comparing full names, place, and date of birth) as to avoid duplicate names in the database.

7.1. List of attributes needed for a customer:

ID type (CIN, Driver's License, Passport – not null)

ID number (not null, alphanumeric, no space or special characters)

Country of Issue (not null, alphabetic, space ok)

ID Expiration Date (not null)

ID Issue date (not null)

First name (not null, space & special characters are ok)

Middle name (optional, space & special characters are ok)

Last name (not null, space & special characters are ok)

Date of Birth (not null)

Place of Birth (not null, space & special characters are ok)

Street Address (optional)

Rural Section (optional)

City (not null)

Country (not null)

Mobile 1 (not null)

Mobile 2 (optional)

Comments (optional)

Note: Haiti's mobile numbers are 8 digits long. If numbers in mobile 1 and mobile 2 are 8 digits long, they are assumed to be local numbers (Haiti's number). In that case, program is to add country code "+509" so that mobile numbers can be displayed in the international format.

Customers photos and documents are important pieces of information for the day-to-day operations of our business. Therefore, the program should be able to store customers' photos (jpeg), and documents (pdf).

8. Transactions

There are five types of transactions:

- Received (money is paid out to customers in HA – programs updates cash drawer balance)
- Sent (money is collected from customers either in US or HA)
- Exchange (HA currency is paid out to customers in exchange for US Dollars)
- Withdrawals (money is disbursed to pay for the company expenses, or to give free interest loan to employees)
- Bill Pay (money is collected from customers in HA for services)

After each of the above transactions, the program should update the balance in the Cash Drawer accordingly.

When recording a new transaction, the program should be able to generate some sort of dynamic form depending on the type of transaction being recorded.

8.1. Attributes for received transactions

a. Transfer ID (user input, Not null)
b. Customer's ID Number (user input, search database. If not in database, create customer)
c. Customer's ID Type (program output depending on ID number – Not null)
d. Customer's' ID Country of Issue (Program output depending on ID number)
e. Customer's Address (program output: Street address, Rural Section, City, Country)
f. Transaction Amount (in Gourdes – input by cashier)
g. Transaction Company (Company1, Company2, Company3, Company4, Company5)
h. Payout Amount in HA (program output: Amount in (f) divided by 5, rounded down to the nearest integer. Example: 1831.95 will be rounded down to 1831.00)
i. Sender's full name (not null)
j. Sender's country (not null)
k. Sender's phone number (optional)
l. Comments (optional)

8.2. Attributes for sent transactions

a. Transfer ID (user input, Not null)
b. Customer's ID Number (user input, search database. If not in database, create customer)
c. Customer's ID Type (program output depending on ID number – Not null)
d. Customer's' ID Country of Issue (Program output depending on ID number)
e. Transaction Amount (in Gourdes or in US Dollars – input by cashier)
f. Transaction Company (Company1, Company2, Company3, Company4, Company5)
g. Amount to be Collected (program output. If (e) is in Gourdes, divide (e) by 5, round up to the nearest integer. Example: 132.14 will be rounded up to 133.00. If amount in (e) is in US Dollars, round up to the nearest integer, then update cash drawer accordingly).
h. Receiver's first full name (not null)
i. Receiver's phone number (optional)
j. Comments (optional)

8.3. Attributes for exchange transactions

a. Exchange ID (program generated, Not null)
b. Customer's ID Number (user input, search database. If not in database, create customer)
c. Customer's ID Type (program output depending on ID number – Not null)
d. Customer's' ID Country of Issue (Program output depending on ID number)
e. Customer's full name (program output: first name + last name)
f. Exchange Amount (in US Dollars – to be input by cashier)
g. Exchange Payout in HA (program output: Amount in (f) multiplied by today's exchange rate, divided by 5, then rounded down to the nearest integer)
h. Comments (optional)

8.4. Attributes for withdraw transactions

a. Withdraw ID (program generated, Not null)
b. Name of Recipient (user input,)
c. Withdraw Amount (in HA – to be input by cashier)
d. Reason for the withdrawal (Expenses, Loan to Employees)
e. Comments (optional)

Note: Program is to keep track of all loans, and expenses with the options to build reports accordingly.

8.5. Attributes for Bill Pay transactions

a. Pay Bill ID (program generated, not null)
b. Customer's full name (First name + Last name, not null)
c. Pay Bill Amount (in HA – input by cashier, not null)
d. Services (Archives, Canalsat)
e. Comments (optional)

9. Reports

9.1. Daily Report

Company Name

Daily Report of (date selected)

	Received in HA*	Sent in HA	Sent in US**	Received Local
Company 1	Sum(all Company1 received transactions input by user)/5	Sum(all Company1 sent transactions **to Haiti** input by user)/5	Sum(all Company1 sent transactions in USD input by user)	Sum(all Company1 received transactions **from country HAITI** input by user)/5
Company 2	Sum(all Company2 received transactions input by user)/5	Sum(all Company2 sent transactions **to HAITI** input by user)/5	Sum(all Company2 sent transactions in USD input by user)	Sum(all Company2 received transactions **from country HAITI** input by user)/5
Company 3	Sum(all Company3 received transactions input by user)/5	Sum(all Company3 sent transactions **to Haiti** input by user)/5	Sum(all Company3 sent transactions in USD input by user)	Sum(all Company3 received transactions **from country HAITI** input by user)/5
Company 4	Sum(all Company4 received transactions input by user)/5	Sum(all Company4 sent transactions **to Haiti** input by user)/5	Sum(all Company4 sent transactions in USD input by user)	Sum(all Company4 received transactions **from country HAITI** input by user)/5
Company 5	Sum(all Company5 received transactions input by user)/5	Sum(all Company5 sent transactions **to Haiti** input by user)/5	blank	blank
Exchange	Sum (all exchange transactions in US input by user) x Daily Rate /5	blank	Sum (all exchange transactions in US input by user)	blank
Archives	blank	Sum (all archives paid bills)	blank	blank
Canalsat	blank	Sum (all Canalsat paid bills)	blank	blank
Total	xxxxx	xxxx	xxxx	xxxx

*HA is Haitian Dollars

** US is US Dollars

9.2. Accounting Report

Company Name

Accounting Report for (selected Date)

	in US Dollars	In HA Dollars	In Gourdes
Company1	Sum [(all Company1 received transactions from foreign country input by user) x 0.3] /Daily Rate – [Sum(all Company1 sent transactions in USD input by user)]	Sum [(all Company1 received transactions from foreign country input by user)x 0.7 /5] + [sum(all Company1 received transactions **from county Haiti** input by user)/5] – [Sum (all Company1sent transactions **to Haiti** input by user)/5]	HA x 5
Company2	Sum [(all COMPANY2 received transactions from foreign country input by user) x 0.3] /Daily Rate – [Sum(all COMPANY2 sent transactions in USD input by user)]	Sum [(all COMPANY2 received transactions from foreign country input by user)x 0.7 /5] + [sum(all COMPANY2 received transactions **from county Haiti** input by user)/5] – [Sum (all COMPANY2 sent transactions **to Haiti** input by user)/5]	HA x 5
Company3	Sum [(all Company3 received transactions from foreign country input by user) x 0.3] /Daily Rate – [Sum(all Company3 sent transactions in USD input by user)]	Sum [(all Company3 received transactions from foreign country input by user)x 0.7 /5] + [sum(all Company3 received transactions **from county Haiti** input by user)/5] – [Sum (all Company3 sent transactions **to Haiti** input by user)/5] – Total Archives Amount – [Total Canalsat Amount –(Nmber of Canalsat x 4)]	HA x 5
Company4	Sum [(all Company4 received Company4 from foreign country input by user) x 0.3] /Daily Rate – [Sum(all Company4 sent transactions in USD input by user)]	Sum [(all Company4 received transactions from foreign country input by user)x 0.7 /5] + [sum(all Company4 received transactions **from county Haiti** input by user)/5] – [Sum (all Company4 sent transactions **to Haiti** input by user)/5]	HA x 5

Important: Program should provide options to run the Accounting Report for a single company over a specified date range (up to 30 days).

9.3. Verification Report

Company Name
Verification Report (date selected)

	Received in HA*	Payout Amount	Spread
Company1	Sum(all Company1 received transactions input by user)/5	Sum(all Company1 received transactions calculated by Program)	Received - Payout
COMPANY2	Sum(all COMPANY2 received transactions input by user)/5	Sum(all COMPANY2 received transactions calculated by Program)	Received - Payout
Company3	Sum(all Company3 received transactions input by user)/5	Sum(all Company3 received transactions calculated by Program)	Received - Payout
Company4	Sum(all Company4 received transactions input by user)/5	Sum(all Company4 received transactions calculated by Program)	Received - Payout
Exchange	Sum (all exchange transactions in US input by user) x Daily Rate /5	Sum (all exchange transactions in US calculated by program)	Received - Payout
Total	xxxxx	xxxx	xxxx

Important: Program should provide options to run the Verification Report for a single company over a specified date range (up to 30 days).

NOTE: Tables are used for clarity and calculations purposes only. Actual reports should NOT be in table format. Also, program should provide options to generate reports in PDF format that can be sent via email, or WhatsApp.

For any questions or additional information, please feel free to reach out to me.